

RS-422/485 Universal PCI Multi-Port Communication Board



Introduction

RS-422/485 Golden I/O series is a line of Universal PCI Multi-port Serial Communication Board, which attaches DB9 or DB25 RS-422/485 serial ports on your system for industrial communication and automation applications. It is compatible with both 3.3V or 5V and 32-bit or 64-bit PCI Bus, allowing the multi-port serial card to be installed in virtually any available PC system and compatible with all major operating systems.

RS-422/485 Universal PCI Multi-port Serial Communication Board supports 2 / 4 / 8 independent RS-422 or RS-485 ports, with each port supporting 128K byte FIFO buffer and are able to control devices in a multi-drop mode. Furthermore, the isolation and surge protection functions can protect your equipment and controller from damaged by lightning or high potential voltage damage, especially in the critical or harsh factory environment.

ARSC™ (Auto RTS Signal Control) technology is the best solution for controlling the half-duplex RS-485 transmission and receiving mode without software or writing extra code. In addition, RS-422/485 auto identify and switch technology allows users the convenience of changing between RS-422 and RS-485 devices without powering down the system for jumpers or switches setting. RS-422/485 Universal PCI Multi-port Serial Communication Boards are the best solution for all of industrial communication and automation applications.

Features

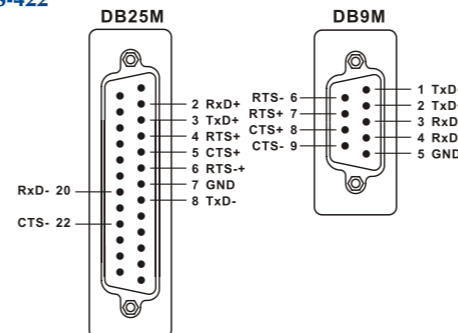
- Fully compatible with PCI Spec. Ver2.2 standard.
- 2 / 4 / 8 independent RS-422/485 serial ports built-in.
- Supports both 64-bit & 32-bit PCI Bus and 3.3V & 5V connector keys.
- Built-in termination resistors to avoid cross-talking.
- RTS/CTS± Handshaking Communication mode for RS-422/485.
- Auto Detect and Switch RS-422 and RS-485 without jumper settings.
- Certified by Microsoft WHQL, CE, FCC approval.
- RS-485 ARSC™ (Auto RTS Signal Control) technology can identify the status of data transceiver or receiver and send RTS signal automatically, instead of using software to control the transmitter.
- High speed 16C650 compatible communication controller with SUN1889 single chip hardware flow control to guarantee no data loss and best technical support.
- Each serial port has built-in 64 byte hardware FIFO & 128K byte software FIFO under Windows 2000, XP, and 2003 operation system.
- Support DOS, Linux, Microsoft WinCE.NET, 3.x, 9x, Me, NT, 2000, XP, and 2003.
- Ready for the Intel® Itanium® and AMD® Athlon 64® 64-bit CPU systems.
- An optional functions of optical isolation (2500V) and embedded surge (600W) protections can prevent lightning or high potential voltage damage.

Specification

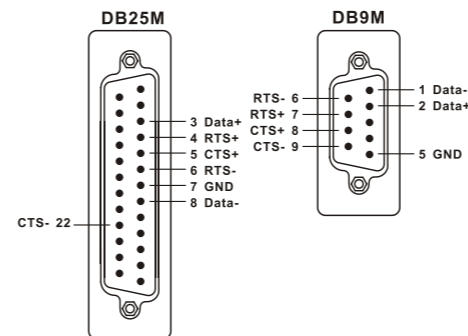
Model	RS-422/485 Universal PCI Communication Board
Mode of Operation	Differential Mode (RS-422 Full-Duplex / RS-485 Half-Duplex)
Controller	SUN1889 16C650 Compatible UART
Bus Interface	64-bit & 32-bit PCI Bus / 3.3V & 5V Connector Key
Number of Ports	2 / 4 / 8 DB9 or DB25 Male ports
Bracket	Standard 121 mm, Low Profile 79.2 mm
IRQ & IO Address	Assigned by BIOS / O.S.
FIFO	32 byte hardware FIFO & 128K byte software FIFO
Baud Rate	75 ~ 921,600bps
Data Bit	5, 6, 7, 8
Stop Bit	1, 1.5, 2
Parity	Even, Odd, None, Mark, Space
Flow Control	None, Xon/Xoff, HardWare

Pin Assignment

• RS-422



• RS-485



Driver Support	Windows CE.NET / 3.1 / 95 / 98 / Me / 2000 / XP / 2003 Linux 2.2.x, 2.4.x, 2.6.x, DOS
Regulatory Approvals	CE, FCC / Microsoft WHQL
Operation Temperature	0°C ~ 60°C

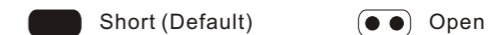
Package List

Please check if the following items are present and in good condition upon opening your package. Contact your vendor if any item is damaged or missing.

- RS-232 Universal PCI Multi-Port Communication Board
- Serial Cable
 - 4 ports series : DB37 Male to 4 ports DB9 or DB25 Male × 1
 - 8 ports series : DB78 Male to 8 ports DB9 or DB25 Male × 1
- CD Driver
- Quick Installation Guide (this document)
- User Manual

Jumper Setting

RS-422/485 PCI serial board with built-in termination resistors in each serial port. You can modify the jumper setting (short the pins) to avoid impedance mismatched problem when operate under Multi-drop transmission.



Driver Installation

In order to ensure proper operation of your RS-422/485 PCI serial board, the driver will be in the CD bound with your product. You can specify the location (folder) as below:

Operation System	Driver Location
Windows 2000 / XP / 2003	:\\IO\PCI IO\Win2K & XP & 2003\Setup.exe
Windows 2000 / XP / 2003	:\\IO\PCI IO\WHQL_Win2K & XP & 2003\
Windows XP / 2003 (64-bit)	:\\IO\PCI IO\WinXP and 2003_64 bit\
Windows 95 / 98 / Me	:\\IO\PCI IO\Win9x\
Windows NT4.0	:\\IO\PCI IO\WinNT\
Windows 3.1 / DOS	:\\IO\PCI IO\DOS\PCIDOS.exe
Windows CE.NET	:\\IO\PCI IO\WinCE\
Linux 2.2.x, 2.4.x, 2.6.x	:\\IO\PCI IO\Linux\
User Manual	:\\IO\PCI IO\Manual\IPC.pdf

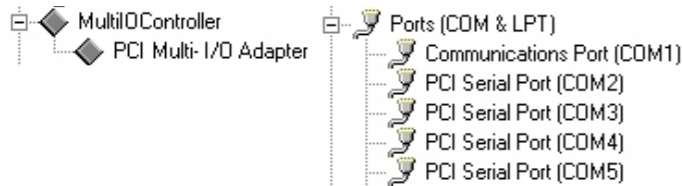
※ You can find the detail of the installation steps in the user manual.

RS-422/485 Universal PCI Multi-Port Communication Board

● Hardware Verity

Please launch the "Device Manager" to verify hardware installation correctly.

Start > Controller Panel > System > Device Manager

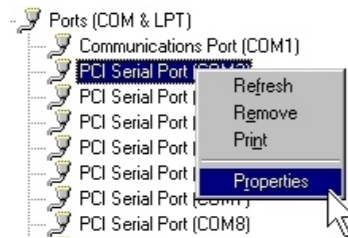


※The number of COM ports will depend on what products you bought.

● Port Setting

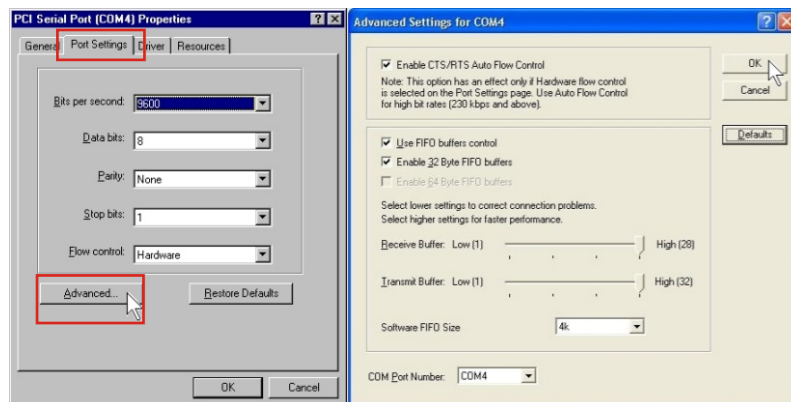
After installing RS-422/485 PCI serial board successfully, you can modify the setting for each serial port in device manager.

1. Right click your mouse on the COM port, and select "Properties".



2. Select "Port Setting" page to modify COM port setting.

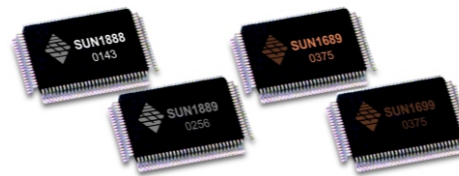
3. Select "Advanced" icon, you can modify COM port number and FIFO.



● Core Technologies

High Performance & Intelligent ASIC

SUN1889 and SUN1699 are high performance and intelligent 16C650 UART. It's not only for full compatibility with Microsoft OS series and Linux, but also allowing us to offer complete support for driver and technological change on kinds of Serial interface including RS-232 / 422 / 485.



High Efficiency 128K byte FIFO



FIFO (First-in-First-out) buffer size decides the interrupt frequency to the computer's CPU. The bigger the size of the FIFO buffer, the more of the data flow, the system will work consistently at anytime and the resource of CPU will be saved, therefore the system performance can be dramatically increased. We provide large capacity size of 128K byte FIFO buffer memory; it is 1024 times faster than the current existing PCI-Bus serial card on the market. The unique 128K FIFO technology design is the leader in the I/O industrial circles. Note that this feature only works under Windows 2000, XP and 2003 operation system.

Universal PCI Interface



With the trend of sharing maximum bandwidth, reducing power consumption, and speed up transmission speed, the PCI bus standard has moved from 32-bit PCI/5V to 64-bit PCI/3.3V. RS-422/485 Universal PCI Card allows users to plug into both a 3.3V/5V and 32/64-bit slot with fully compliance with PCI Spec.Ver2.2 standard. The hardware configuration for the IRQ and I/O address is automatically assigned by the PCI BIOS.

RoHS - Green Products



RoHS - The Restriction on Hazardous Substances prohibits the use of lead, cadmium, mercury, hexavalent chromium, Polybrominated Biphenyl (PBB), and Polybrominated Diphenyl Ether (PBDE) flame retardants. One of the main concerns of manufacturers of equipment is getting rid of lead, since lead is one of the main ingredients of solder. Our products are all "Green Products" and also satisfied with the EU's RoHS directive.

RS-422/485 Auto Identify & Switch Technology



The unique circuit-designed RS-422/485 Auto Identify & Switch technology can automatically identify the state of RS-422 full-duplex or RS-485 half-duplex and control the data transceiver and receiver wires at the same port without selecting jumpers or switches anymore. It's more convenient for users to avoid shutting down the computer and opening the chassis for jumpers or switches setting.

RS-485 ARSC™ Technology



Due to the limitation of traditional RS-485 two wires half-duplex communication, system must determine when to switch the transmitter on and off. There is only one node can be switch on and off at any given time by software. ARSC™ (Auto RTS Signal Control) technology can identify the status of data transceiver or receiver and send RTS signal automatically, instead of using software/hardware to control the transmitter.

This RS-422/485 PCI serial board has built-in ARSC™ technology now. System can manage the RS-485 ports without writing extra code to control the half-duplex protocol by using ARSC™ technology.

